

=> fil reg
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STRUCTURE FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9
DICTIONARY FILE UPDATES: 18 OCT 2006 HIGHEST RN 910777-14-9

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=> d sta que 13
L1 STR
 4 8 13 17
 S O O S
 { { { {
N~~C~~S~~Ak~~C~~N~~Ak~~N~~C~~Ak~~S~~C~~N
1 2 3 5 6 7 9 10 11 12 14 15 16

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

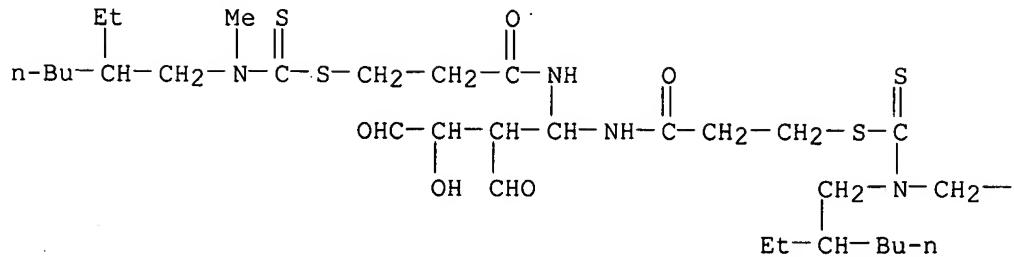
STEREO ATTRIBUTES: NONE

L2 8 SEA FILE=REGISTRY SSS FUL L1
L3 3 SEA FILE=REGISTRY ABB=ON PLU=ON L2 AND (C37H68N4O5S4 OR
 C36H68N4O4S4 OR C38H70N4O5S4)

=> d ide can tot 13

L3 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 865875-06-5 REGISTRY
ED Entered STN: 24 Oct 2005
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 14-ethyl-5-(1-formyl-2-hydroxy-3-oxopropyl)-12-methyl-3,7-dioxo-11-thioxo-10-thia-4,6,12-triazaoctadec-1-yl ester (9CI) (CA INDEX NAME)
MF C38 H70 N4 O5 S4
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

PAGE 1-A



PAGE 1-B



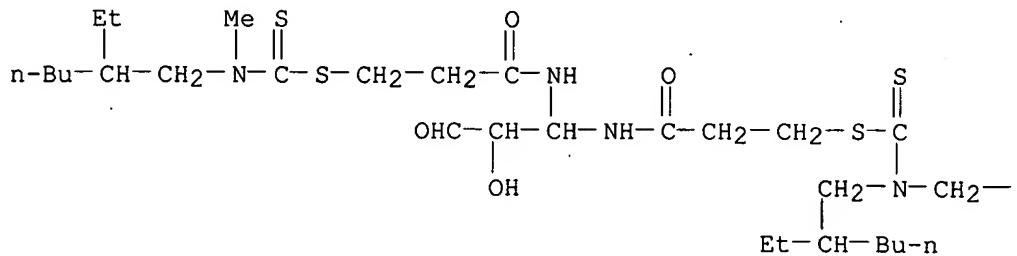
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

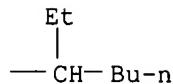
REFERENCE 1: 143:349757

L3 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 865875-05-4 REGISTRY
ED Entered STN: 24 Oct 2005
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 14-ethyl-5-(1-hydroxy-2-oxoethyl)-12-methyl-3,7-dioxo-11-thioxo-10-thia-4,6,12-triazaoctadec-1-yl ester (9CI) (CA INDEX NAME)
MF C36 H68 N4 O4 S4
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

PAGE 1-A



PAGE 1-B



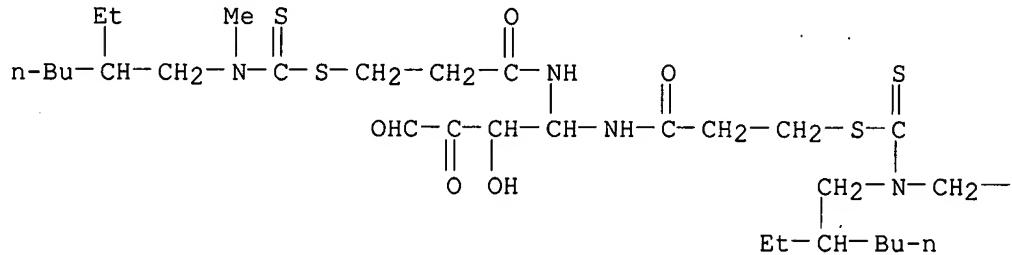
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1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

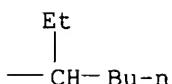
REFERENCE 1: 143:349757

L3 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 865875-04-3 REGISTRY
ED Entered STN: 24 Oct 2005
CN Carbamodithioic acid, bis(2-ethylhexyl)-, 14-ethyl-5-(1-hydroxy-2,3-dioxopropyl)-12-methyl-3,7-dioxo-11-thioxo-10-thia-4,6,12-triazaoctadec-1-yl ester (9CI) (CA INDEX NAME)
MF C37 H68 N4 O5 S4
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

PAGE 1-A



PAGE 1-B



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:349757

=> d his

(FILE 'HOME' ENTERED AT 16:28:37 ON 19 OCT 2006)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 16:28:51 ON 19 OCT 2006
ACT LANG815/A

L1 STR
L2 8 SEA FILE=REGISTRY SSS FUL L1

L3 3 S L2 AND (C37H68N4O5S4 OR C36H68N4O4S4 OR C38H70N4O5S4)
L4 1 S ACRYLAMIDE/CN
L5 2 S (ETHANEDIAL OR PENTANEDIAL)/CN
L6 1 S CARBON DISULFIDE/CN

FILE 'HCAPLUS' ENTERED AT 16:30:20 ON 19 OCT 2006
L7 49535 S L6 OR CS2 OR CARBON() (DISULFIDE OR DISULPHIDE)
L8 148 S L7 AND (L4 OR ACRYLAMIDE)
L9 6 S L8 AND (L5 OR ETHANEDIAL OR PENTANEDIAL OR GLYOXAL OR GLUTARA
L10 6 S L9 AND (PY<=2004 OR PRY<=2004 OR AY<=2004)
SEL RN

FILE 'REGISTRY' ENTERED AT 16:32:12 ON 19 OCT 2006
L11 913 S E1-E913
L12 54 S L11 AND (N AND C AND H)/ELS AND 3/ELC.SUB
L13 31 S L12 AND NR>=1
L14 23 S L12 NOT L13
SEL RN 6 10 12 15
L15 4 S E914-E917

FILE 'HCAPLUS' ENTERED AT 16:35:14 ON 19 OCT 2006
L16 5 S L15 AND L10
L17 1 S L15 (L) RACT+NT/RL AND L16
L18 1 S L3
L19 1 S L17,L18

FILE 'REGISTRY' ENTERED AT 16:35:51 ON 19 OCT 2006

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 16:36:04 ON 19 OCT 2006
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FILE COVERS 1907 - 19 Oct 2006 VOL 145 ISS 17

FILE LAST UPDATED: 18 Oct 2006 (20061018/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 119 all hitstr

L19 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:1078332 HCAPLUS
 DN 143:349757
 ED Entered STN: 07 Oct 2005
 TI Dithiocarbamate-type multifunctional additives for lubricating oils and fuels
 IN Baranski, John R.; Nalesnik, Theodore E.
 PA Crompton Corporation, USA
 SO U.S. Pat. Appl. Publ., 8 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C07C0333-20
 INCL 558236000
 CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005222447	A1	20051006	US 2004-815579	20040331 <--
	WO 2005102994	A1	20051103	WO 2005-US7764	20050307 <--
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PRAI US 2004-815579 A 20040331 <--

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2005222447	ICM	C07C0333-20	
	INCL	558236000	
	IPCI	C07C0333-20 [ICM,7]; C07C0333-00 [ICM,7,C*]	
	IPCR	C07C0333-00 [I,C*]; C07C0333-20 [I,A]; C10L0001-10 [I,C*]; C10L0001-24 [I,A]; C10M0135-00 [I,C*]; C10M0135-18 [I,A]	
	NCL	558/236.000	
	ECLA	C07C333/20	
WO 2005102994	IPCI	C07C0333-20 [ICM,7]; C07C0333-00 [ICM,7,C*]; C10M0135-18 [ICS,7]; C10M0135-00 [ICS,7,C*]; C10L0001-24 [ICS,7]; C10L0001-10 [ICS,7,C*]	
	IPCR	C07C0333-00 [I,C*]; C07C0333-20 [I,A]; C10L0001-10 [I,C*]; C10L0001-24 [I,A]; C10M0135-00 [I,C*]; C10M0135-18 [I,A]	
	ECLA	C07C333/20	

OS MARPAT 143:349757

AB Dithiocarbamate-type multifunctional additives for lubricating oils and fuels are of general formula R12N-C(:S)-S-R3-C(:O)-NH-R4-NH-C(:O)-R3-S-C(:S)-NR12 (I), in which R1, R2, R5, and R6 = C1-30-alkyl, C3-30-branched alkyl, C3-12-cycloalkyl, C5-12-aryl, or C6-12-alkylaryl; R3 = C2-20-alkylene, and R4 = C1-20-alkylene substituted with such groups as -CHO, -CH(OH)-C(:O)-CHO, or -C(:O)-CH(OH)-CHO. I is synthesized as the reaction product from: (1) a di(hydrocarbyl)thiocarbamate intermediate derived from the reaction of a dihydrocarbyl amine and CS2, (2) an amide of formula R7-C(:O)NH2 (R7 is C2-30-alkenyl), and (3) a carbonyl compound A preferred alkenyl amide (component (2)) is acrylamide; a preferred carbonyl compound (component(3)) is a dialdehyde. The dithiocarbamate-type additives impart antioxidant, antifriction, and antiwear properties to lubricating oils, diesel fuel, and gasoline.

ST dithiocarbamate lubricating oil fuel multifunctional additive; ethylhexyl amine dithiocarbamate dialdehyde acrylamide reaction product; diesel fuel gasoline multifunctional additive

IT Lubricating oil additives
(antifriction; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Lubricating oil additives
(antioxidants; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Lubricating oil additives
(antiwear; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Diesel fuel additives
Gasoline additives
Lubricating oil additives
(multifunctional; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Aldehydes, uses
Carbonyl compounds (organic), uses
Dialdehydes
Dicarbonyl compounds
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(reaction products with unsatd. amides and dialkyldithiocarbamates; additives; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Amides, uses
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(unsatd., reaction products with carbonyl compds. and dialkyldithiocarbamates; additives; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT Amides, uses
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(α, β -unsatd., reaction products with carbonyl compds. and dialkyldithiocarbamates; additives; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT 79-06-1DP, Acrylamide, reaction products with carbonyl compds. and dialkyldithiocarbamates 107-22-2DP, Glyoxal , reaction products with unsatd. amides and dialkyldithiocarbamates 111-30-8DP, Glutaraldehyde, reaction products with unsatd. amides and dialkyldithiocarbamates 594-07-0DP, Dithiocarbamic acid, dialkyl derivs., reaction products with alkenylamides and carbonyl compds. 865875-04-3P 865875-05-4P 865875-06-5P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(additives; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT 106-20-7, Di(2-ethylhexyl) amine

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactions of; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT 865875-03-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis and reactions of; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

IT 79-06-1DP, Acrylamide, reaction products with carbonyl compds.

and dialkyldithiocarbamates 107-22-2DP, Glyoxal

, reaction products with unsatd. amides and dialkyldithiocarbamates

111-30-8DP, Glutaraldehyde, reaction products with

unsatd. amides and dialkyldithiocarbamates 865875-04-3P

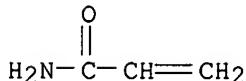
865875-05-4P 865875-06-5P

RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(additives; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

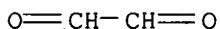
RN 79-06-1 HCAPLUS

CN 2-Propenamide (9CI) (CA INDEX NAME)



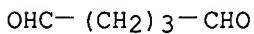
RN 107-22-2 HCAPLUS

CN Ethanodial (9CI) (CA INDEX NAME)



RN 111-30-8 HCAPLUS

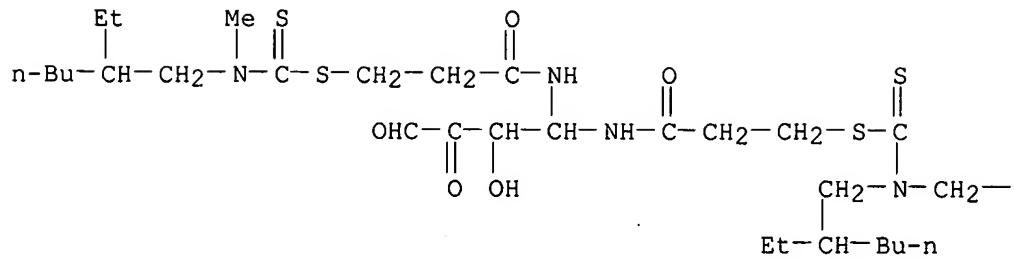
CN Pentanodial (9CI) (CA INDEX NAME)



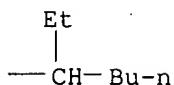
RN 865875-04-3 HCAPLUS

CN Carbamodithioic acid, bis(2-ethylhexyl)-, 14-ethyl-5-(1-hydroxy-2,3-dioxopropyl)-12-methyl-3,7-dioxo-11-thioxo-10-thia-4,6,12-triazaoctadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A

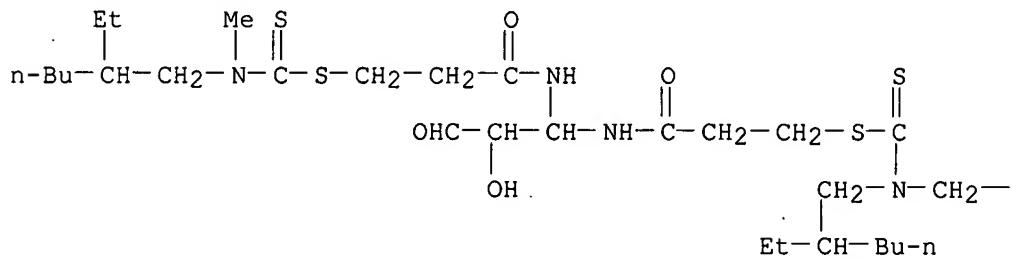


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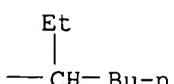


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CN Carbamodithioic acid, bis(2-oxoethyl)-12-methyl-3,7-dioxester (9CI) (CA INDEX NAME)

PAGE 1-A

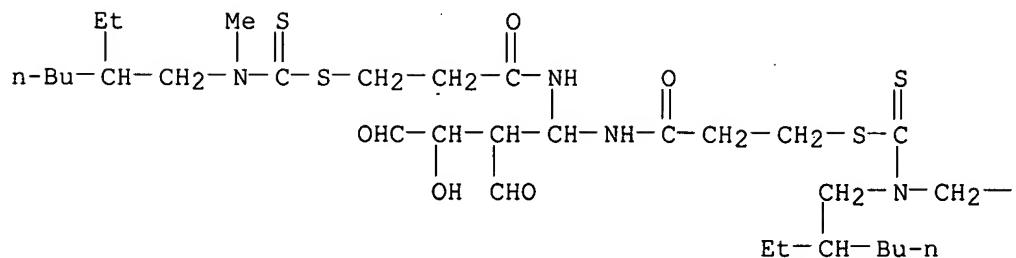


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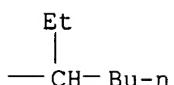


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CN Carbamodithioic acid, bis(2-ethylhexyl)-, 14-ethyl-5-(1-formyl-2-hydroxy-3-oxopropyl)-12-methyl-3,7-dioxo-11-thioxo-10-thia-4,6,12-triazaoctadec-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



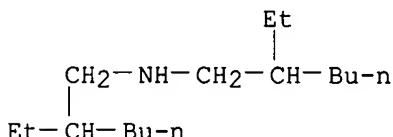
IT 106-20-7, Di(2-ethylhexyl) amine

RL: RCT (Reactant); RACT (Reactant or reagent)

RCI (Reactant), RACI (Reactant or reagent)
(reactions of; dithiocarbamate-type multifunctional additives for lubricating oils and fuels)

RN 106-20-7 HCAPLUS

CN 1-Hexanamine, 2-ethyl-N-(2-ethylhexyl)- (9CI) (CA INDEX NAME)



SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Amy Lang Examiner # 80324 Date: 10-11-06
 Art Unit: 1714 Phone Number 30 2057 Serial Number: 10/815 579
 Mail Box and Bldg/Room Location: 10D30 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Diuthiocarbamate Derivatives useful as Lubricant and Fuel Additive

Inventors (please provide full names): Baranski, John R. ; Nalesnik, Theodore E.

Earliest Priority Filing Date: 3-31-04

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

please search claims 16 and 18-21.
 See attached. Thanks.

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Ctr.

OCT 17 REC'D

Pat. & T.M. Office

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>AC</u>	NA Sequence (#)	STN
Searcher Phone #:	<u>22504</u>	AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:	<u>10/10/06</u>	Bibliographic	Dr. Link
Date Completed:	<u>10/19/06</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:		Fulltext	Sequence Systems
Clerical Prep Time:	<u>15</u>	Patent Family	WWW/Internet
Online Time:	<u>30</u>	Other	Other (specify)



STIC Search Report

EIC 1700

STIC Database Tracking Number: 204766

TO: Amy T Lang
Location: Remsen 10d30
Art Unit : 1714
October 19, 2006
Phone: 571-272-9057
Case Serial Number: 10 / 815579

From: Jan Delaval
Location: EIC 1700
Remsen 4a30
Phone: 571-272-2504
jan.delaval@uspto.gov

Search Notes